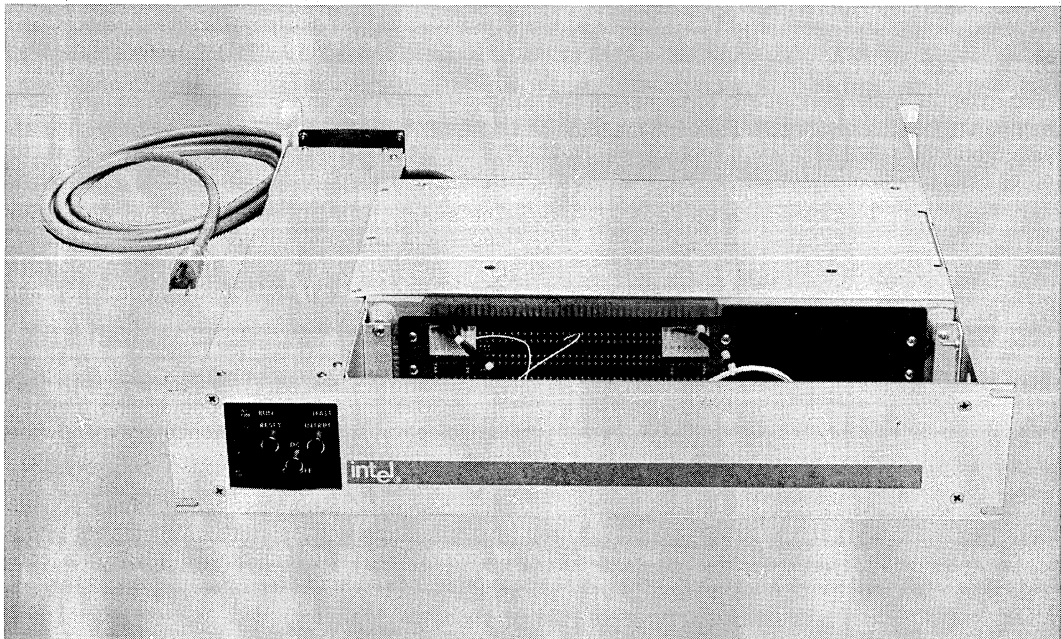




iSBC 665/iSBC 645™ SYSTEM CHASSIS AND POWER SUPPLY

- Intel MULTIBUS™ system bus 4-slot packaging
- Complete package of rack-mounting, cooling, controls, and power
- Advanced 110 watt switching power supply generates ± 5 , ± 12 VDC
- Meets U.S. and International EMI and safety requirements
- Wide AC voltage margins keep systems running during “brownouts”
- Front panel switches, indicators, and adjustments for operational and service convenience
- Power sense circuitry interrupts system 6 msec prior to power failure

The Intel iSBC 665/iSBC 645 Chassis system provides the MULTIBUS system bus user with a compact set of products offering new standards in 4-slot rack-mount packaging. A high-efficiency switching power supply allows use of 115/230 VAC (+ 15/ - 20%), with large surge and noise components, to deliver smooth, stable DC power to the OEM board load. Advanced power-fail sense and restart logic gives the user sufficient time to bring the system to an orderly shutdown in the event of AC mains power failure. Mechanical design features include EMI suppression and a retainer/cover for system boards and I/O edge connectors.



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FUNCTIONAL DESCRIPTION

iSBC 665™ System Chassis

The iSBC 665 Chassis is a complete micro-computer package providing four board slots in a 3.5" vertical space.

RACK MOUNT PACKAGE

The iSBC 665 Chassis mounts in a 19" EIA standard rack, using its front panel and hangers at the rear of the chassis to secure it to both sets of rails in the cabinet. If slide mounting is preferred, a tray with slides should be used as a platform for the chassis. The physical integrity of the system is enhanced by addition of a connector retainer at the (rear-facing) opening of the cardcage.

INTEGRAL COOLING

The fan on the power supply is utilized to draw ambient air across the boards prior to its being used to cool the supply.

FRONT PANEL

The front panel of the iSBC 665 Chassis forms a complete control center for the system installed in the chassis (see Figure 1).

iSBC 645 Power Supply

The 110-watt supply of the iSBC 665 Chassis is designed to provide advanced features to the Intel system builder who faces complex power supply and chassis requirements.

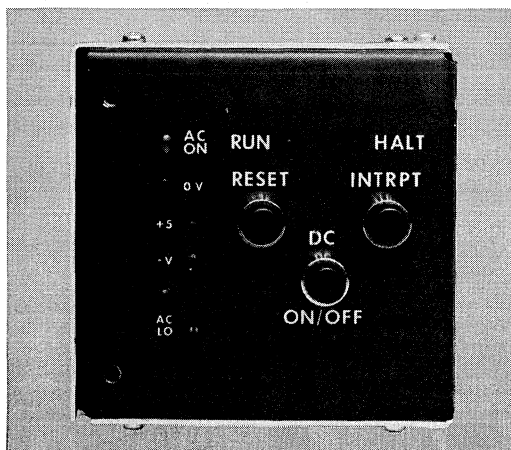


Figure 1. iSBC 665™ Chassis Front Panel Controls

Table 1. iSBC 665™ Chassis/iSBC 645™ Power Supply Control Panel Functions

Label	Function
Controls	
DC ON/OFF	Controls all DC power to the chassis.
RESET	Generates RESET/ signal to pin 14 of P1 (MULTIBUS system bus) backplane.
INTRPT	Generates INT/ signal to pin 42 of P1.
Indicators	
HALT, RUN	Indicate status of system CPU board.
AC ON	Indicates AC power present in supply (AC power switch is located at the rear of the supply).
OV	Indicates power supply shut-down due to an overvoltage condition on +5 or ± 12 VDC outputs.
AC LO	Indicates that AC voltage is below the operating range and the supply has shut down.
Adjustments	
+5	Adjusts +5 VDC output voltage.
-V	Adjusts negative adjustable voltage; set to -5 VDC at the factory.
AC LO	Adjusts AC sense threshold at which the system generates power-fail signals; set to 88/176 VAC at factory.

INTERNATIONAL ACCEPTANCE

The supply is a UL-recognized component; the supply/chassis combination is also designed to meet the safety requirements of CSA (Canada) and VDE (Germany) as industrial, computer, and office equipment.¹

EMI STANDARDS

The FCC standards for conducted and radiated EMI (electromagnetic interference) are met by the supply, thus the chassis packaging will enhance the OEM's efforts to assemble systems which must comply with the FCC Part 15 Rules. In addition, the supply/chassis design meets the most stringent VDE requirements (0871/0875) for conducted and radiated EMI.¹

NOTE:

1. CSA and VDE testing have not been officially completed; testing at independent laboratories indicates that these safety and EMI requirements are met. Official testing should be completed in late 1981.

BROWNOUT PROTECTION

The wide AC voltage input range allows micro-computer systems packaged in the chassis to function normally at extremely low AC voltage supply levels.

POWER-FAIL WARNING AND RECOVERY

In the event of a complete power failure, an interrupt is generated 6 ms prior to the supply's issuing a subsequent memory protect signal, giving sufficient time for execution of a user program to bring the entire system to an orderly shut-down.

POWER TRANSIENT TOLERANCE

The supply provides immunity for the system from the high-voltage transient surges and spikes seen in AC power systems. The supply itself provides this isolation with a metal-oxide varistor (MOV) and line filter in the input circuitry.

POWER LINE CLOCK

A clock signal is developed from the AC line at twice the line frequency; this gives the system user an extremely accurate time base.

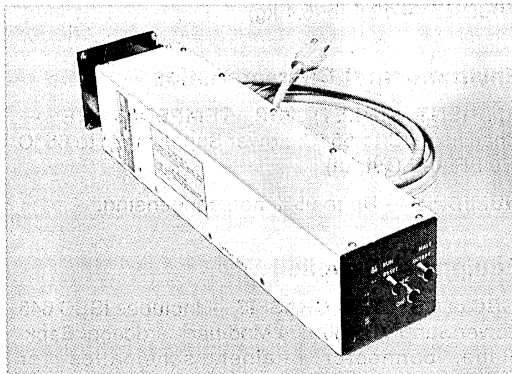


Figure 2. ISBC 645™ Power Supply

SPECIFICATIONS

Electrical Characteristics

INPUT POWER

Frequency: 47–66 Hz

Voltage: 115/230 VAC Single Phase

Range: 90 to 126 VAC/180 to 252 VAC

Consumption (Max.): 230 watts

OUTPUT POWER

Nominal Voltage	Current ² (Max. Amps)	Current Limit Point (Amps)	Overvoltage Protection ³
+ 5	15	18.75	5.25 to 6.25
+ 12	3	3.75	12.6 to 15.0
– 12	1	1.25	– 12.6 to – 15.0
– Adjustable ⁴	1	1.25	N/A

NOTES:

2. Total output power is 110 watts; a maximum of 128 watts is available, but proper operation of the power-fail circuitry is not guaranteed above 110 watts.
3. A minimum load is required on the + 5 VDC output; this load must be at least ½ the sum of the loads (in watts) of the remaining three outputs.
4. – 2.5 to – 12 VDC; factory set to – 5 VDC.

OUTPUT REGULATION (COMBINED LINE AND LOAD) — $\pm 1\%$ under any conditions of AC mains voltage variation (within operational range) and output load change.

PERIODIC AND RANDOM DEVIATION (PARD) — 50 millivolts peak-to-peak, all outputs.

LINE TRANSIENT TOLERANCE — A signal of up to 1000 VDC, with a pulse width of up to 50 microseconds, will have no affect on operation.

POWER FAIL INDICATION — An AC low condition generates ACLO and PFIN/ after AC voltage drops below the allowed voltage range. These signals are available on the P2 connector to generate interrupts. The DC voltages will remain within specifications for 6 milliseconds (worst case) following these interrupts, after which Memory Protect (MPRO/) will go true.

OUTPUT VOLTAGE TEMPERATURE COEFFICIENT — 0.03% per °C over the operating range.

SYSTEM CLOCK — 2× line frequency clock signal available on P2 connector.

Physical Characteristics (See Figure 3)

WIDTH — 19.0 in. (48.3 cm)

LENGTH — 16.25 in. (41.3 cm)

HEIGHT — 3.5 in. (8.9 cm)

WEIGHT — 12.0 lb (5.4 kg)

Environmental Characteristics
AMBIENT (INLET) AIR TEMPERATURE — Chassis: 0°C to 55°C; Power Supply: 0°C to 65°C (Full Rated Output)

HUMIDITY — Up to 95% non-condensing.

Equipment Supplied
ISBC 665 SYSTEM CHASSIS — Includes ISBC 645 Power Supply, ISBC 604 Modular Cardcage/ Backplane, connector retainer, schematics for cardcage/backplane, chassis, and power supply.

ISBC 645 POWER SUPPLY — Includes power supply, schematics for supply.

Reference Manuals (Not Supplied)

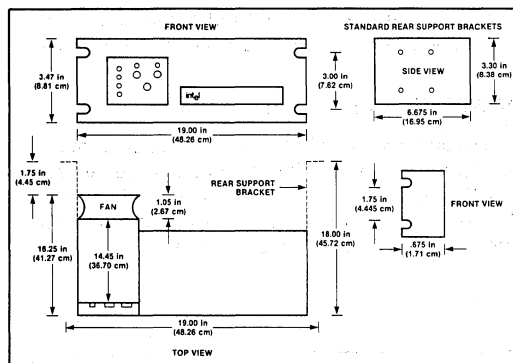
142836 — ISBC 665™ System Chassis Hardware Reference Manual

142918 — ISBC 645™ Power Supply Hardware Reference Manual

9800708 — ISBC 604/614™ Modular Cardcage/ Backplane Hardware Reference Manual

9088683 — Intel MULTIBUS Specification

Manuals may be ordered from any Intel sales representative, distribution office, or from Intel Literature Department, 3065 Bowers Avenue, Santa Clara, California 95051.


Figure 3. ISBC 665™ System Chassis Physical Dimensions
ORDERING INFORMATION
Part Number Description

SBC 665	System Chassis
SBC 645	Power Supply (110 Watt)